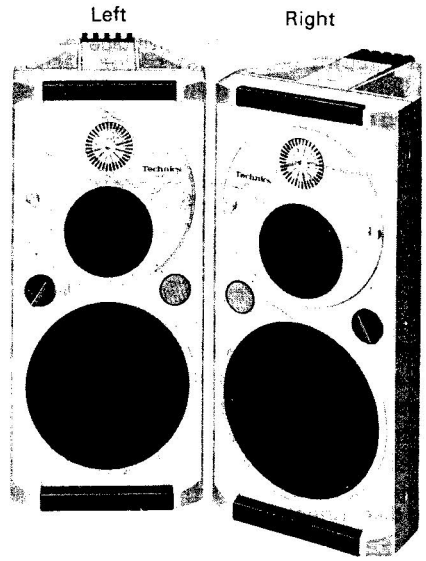
ORDER NO. 82072251C8

Service Manual

Honeycomb Disc Speaker System

SB-F40/(K)

[E], [EG], [EK], [EF]
[EB], [EH], [Ei], [XA]

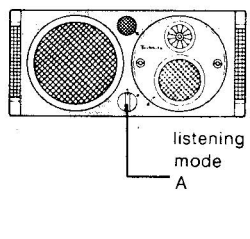
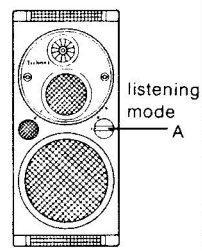
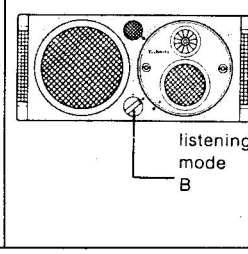
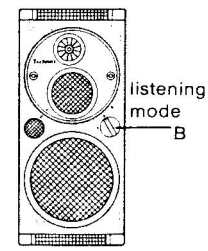


* The colors of this model include silver and black.
* The black type model is indicated by (K) in the Service Manual.
* This model has Right and Left type.

Areas

* [E] is available in Scandinavia and Switzerland.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EB] is available in Belgium.
* [EH] is available in Holland.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

Specifications (Specifications are subject to change without notice for further improvement.)

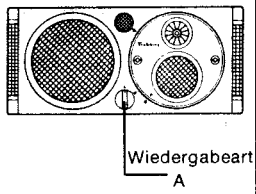
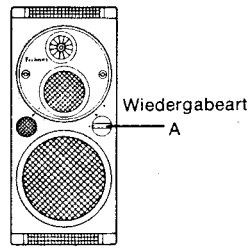
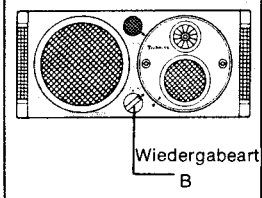
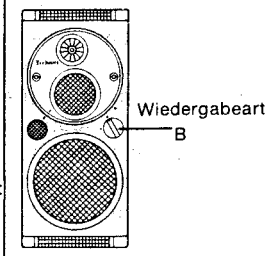
Speaker configuration					
Type		3 way 3 speaker			
Speakers	Woofer	14 cm, Honeycomb Disc			
	Midrange	5.2 cm, Honeycomb Disc			
	Tweeter	2.8 cm, Honeycomb Disc			
Baffle Selector		Air suspension (sealed)	Bass reflex	Air suspension (sealed)	Bass reflex
Impedance		8 ohms		4 ohms	
Input Power	Music	60 W		100 W	
	DIN	30 W		50 W	
Output Sound Pressure Level		87 dB/W (1.0 m)		88 dB/W (1.0 m)	
Crossover Frequency		1,500 Hz, 5,000 Hz		2,000 Hz, 4,000 Hz	
Frequency Range	(−10 dB)	75 Hz~35 kHz	70 Hz~35 kHz	85 Hz~35 kHz	75 Hz~35 kHz
	(−16 dB)	45 Hz~40 kHz	50 Hz~40 kHz		55 Hz~40 kHz
Dimensions (W×H×D)		31.5×15.3×18.7 cm	14.9×31.5×17.0 cm	31.5×15.3×18.7 cm	14.9×31.5×17.0 cm
Weight		3.5 kg			

Technics

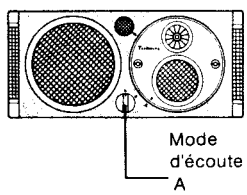
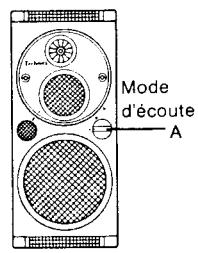
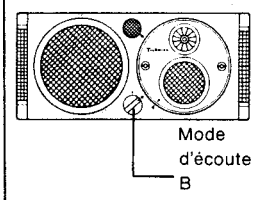
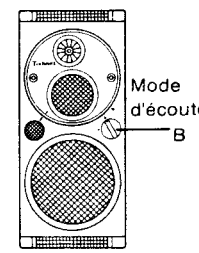
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

TECHNISCHE DATEN

(Spezifikationen können infolge van Verbesser ungen ohne Ankindigung geändert werden.)

Lautsprecheraufstellung					
Typ		3-Weg-System mit 3 Lautsprechern			
Laut-sprecher	Hochtonlautsprecher	14 cm, Wabenscheibe			
	Mitteltonlautsprecher	5,2 cm, Wabenscheibe			
	Tieftonlautsprecher	2,8 cm, Wabenscheibe			
Lautsprecher-Drehscheibe		Geschlossenes System	Baßreflex-System	Geschlossenes System	Baßreflex-System
Impedanz		8 Ohm		4 Ohm	
Belastbarkeit	Musik	60 Watt		100 Watt	
	DIN	30 Watt		50 Watt	
Abgegebener Schalldruckpegel		87 dB/W (in 1,0 m Abstand)		88 dB/W (in 1,0 m Abstand)	
Überschneidungsfrequenz		1.500 Hz, 5.000 Hz		2.000 Hz, 4.000 Hz	
Frequenzbereich	(–10 dB)	75 Hz~35 kHz	70 Hz~35 kHz	85 Hz~35 kHz	75 Hz~35 kHz
	(–16 dB)	45 Hz~40 kHz	50 Hz~40 kHz		55 Hz~40 kHz
Abmessungen (B×H×T)		31,5×15,3×18,7 cm	14,9×31,5×17,0 cm	31,5×15,3×18,7 cm	14,9×31,5×17,0 cm
Gewicht		3,5 kg			

CARACTERISTIQUES (Sujet à changement sans préaris.)

Disposition des haut-parleurs					
Type		3 voies, 3 haut-parleurs			
Haut-parleurs	Grave	14 cm, disque alvéolé			
	Moyennes	5,2 cm, disque alvéolé			
	Aigus	2,8 cm, disque alvéolé			
Sélecteur de baffle		Enceinte fermée	Bass reflex	Enceinte fermée	Bass reflex
Impédance		8 ohms		4 ohms	
Puissance d'entrée	Musique	60 W		100 W	
	DIN	30 W		50 W	
Niveau de pression sonore de sortie		87 dB/W (1,0 m)		88 dB/W (1,0 m)	
Fréquence de commutation		1.500 Hz, 5.000 Hz		2.000 Hz, 4.000 Hz	
Gamme de fréquences	(–10 dB)	75 Hz~35 kHz	70 Hz~35 kHz	85 Hz~35 kHz	75 Hz~35 kHz
	(–16 dB)	45 Hz~40 kHz	50 Hz~40 kHz		55 Hz~40 kHz
Dimensions (l×H×P)		31,5×15,3×18,7 cm	14,9×31,5×17,0 cm	31,5×15,3×18,7 cm	14,9×31,5×17,0 cm
Poids		3,5 kg			

■ FEATURES

BAFFLE SELECTOR

Each speaker system is equipped with a baffle selector to allow the mode to be changed from air suspension (sealed) to bass reflex, and vice versa, and also to allow the speaker configuration to be changed.

- **Air suspension (sealed) and bass reflex**

  The bass sound reproduced through any particular speaker system will change remarkably depending on the condition of the area in which it is used and the way it is positioned. Usually, if the speaker system is used in a car, small room, or other small, confined space, the bass sounds will be excessive; conversely, if the system is used in a large room or is positioned far from the listener, the bass sounds will be insufficient.

  The SB-F40 speaker system is equipped with a baffle selector for mode selection between air suspension (sealed) and bass reflex, to allow the appropriate bass frequency response to be obtained in accordance with the place in which the system is to be used. In the bass reflex mode, the sound pressure at 100 Hz is approximately 2 dB more than during the air suspension mode, so that there is an ample amount of bass sounds being reproduced.

- **Operation of the baffle selector**

  Operate the baffle selector as shown in Fig. 1.

  1. Loosen the two screws on the revolving baffle by turning them counter-clockwise.
     Caution:
     Stop loosening the screws when they cannot be turned anymore; **do not force them.**
  2. Take hold of the two screws and turn the revolving baffle.
  3. Align the arrows at the desired position (either bass reflex or air suspension), and then tighten the screws securely.

- **"T" and "I" configuration**

  The directional characteristic of a speaker system in the areas of the crossover frequencies can be changed considerably by changing the configuration of the speakers. In addition, if the systems are positioned far from each other, the increased sound movement in the areas of the crossover frequencies will cause a deterioration of orientation.

  It follows, therefore, that the midrange and the tweeter in a stereo speaker system should be positioned as close to each other as possible, and, moreover, they should be positioned vertically with respect to the listener in order to prevent deterioration of the orientation in the lateral direction.

  In the SB-F40 speaker system, it is possible to change the configuration of the speakers within the system in order to prevent a deterioration of the characteristics whether the system is positioned vertically or horizontally.

  In order to obtain the flattest possible frequency characteristics, **the speakers in the system should be arranged in the "I" configuration if the system is positioned vertically, and in the "T" configuration if it is positioned horizontally.**

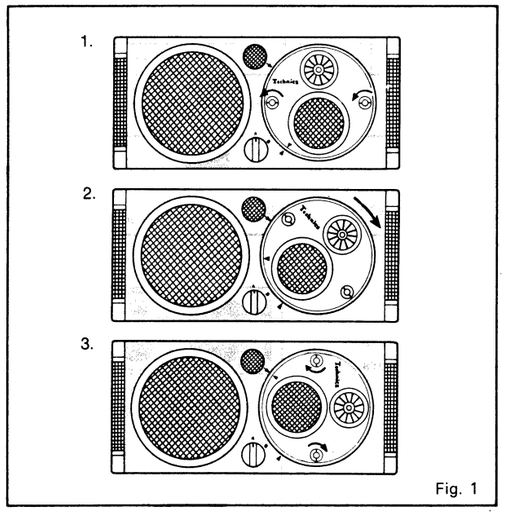


Fig. 1

- **Listening mode switch**

  On the front of the SB-F40 is a listening mode switch which can be used to change the frequency characteristics and the impedance in accordance with the purpose for which the speaker system is to be used.

  Listening mode A

  This position is for wide-range performance. It is suited for high fidelity sound reproduction indoors.

  The impedance for this position is 8Ω.

  Listening mode B

  This position is for high-efficiency performance. It is suited for use with a car stereo or a PA system, or in places where there is a relatively large amount of noise.

  Because the impedance for this position is 4Ω, the amplifier with which the speaker system is to be used must have a load impedance of 4~16Ω.

  When more than one SB-F40 speaker system is being used together, be sure to use the same listening mode for each speaker in order to properly match the impedance with that of the amplifier with which they are being used. The total impedance of all the speaker systems should be greater than the load impedance of the amplifier.

  Caution:

  Be sure to turn down the volume of the amplifier before changing the setting of the listening mode switch.

■ SERVICING METHOD

1. How to remove the cabinet

(1) Remove the 6 screw covers (Fig. 1: ❶~❻).
*Use strong adhesive tape to remove the 6 screw covers (Fig. 1-1).
(2) Remove the 6 setscrews (Fig. 1: ❼~⓬) of the cabinet.

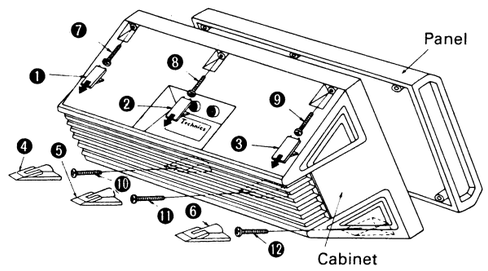


Fig. 1

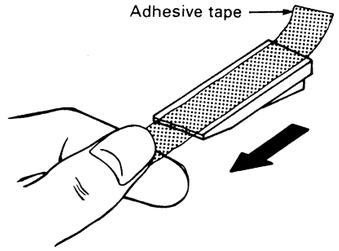


Fig. 1-1

2. How to remove the woofer (See the Exploded View)

(1) Remove the cabinet. (Refer to Sec. 1.)
(2) Remove the 4 setscrews (Exploded View: (N1)) of the woofer, and disconnect the leads from the terminals. Then the woofer can be removed.

3. How to remove the tweeter

(1) Remove the cabinet. (Refer to Sec. 1.)
(2) Remove the 2 setscrews (see the Exploded View: N1) of tweeter (SP1) and pull out the terminal leads. Then the tweeter can be removed.

4. How to remove the midrange

(1) Remove the cabinet. (Refer to Sec. 1.)
Remove the 4 setscrews (see the Exploded View: (N2)) of midrange (SP2) and pull out the terminal leads. Then the midrange can be removed.

5. How to remove the revolving baffle

(1) Remove the cabinet. (Refer to Sec. 1.)
(2) Remove each speaker with reference to Sec. 3 and 4.
(3) Remove the 4 setscrews (Fig. 2: ⓭~⓰) of the revolving baffle retainer (Fig. 2).
(4) Remove the 2 adjusting screws (Fig. 2: ⓱, ⓲) of the revolving baffle. Then the revolving baffle can be removed.

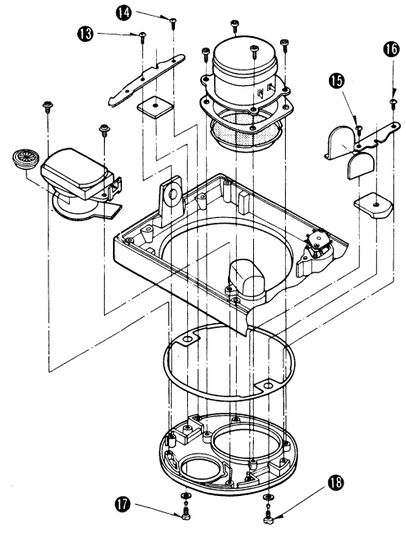


Fig. 2

*When repairing or replacing the front panel and revolving baffle, be sure to apply the specified grease (Kit No. SZZE1003C, Parts No. GREASE1) to the rotary parts shown in Fig. 3.

6. How to remove the listening mode switch

6-1 How to remove the knob (Fig. 4)

(1) Remove the knob by use of adhesive tape (Fig. 4).

6-2 How to remove the switch

(1) Remove the cabinet. (Refer to Sec. 1.)
(2) Remove the knob (refer to 6-1) and nut (Fig. 5: ⑲). Then the switch can be removed.

* Be careful of the position when installing the switch. The flat side of the D-nut should be faced to the outside of the front panel (Fig. 5).

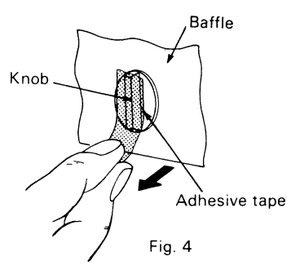


Fig. 4

Apply grease to this part.

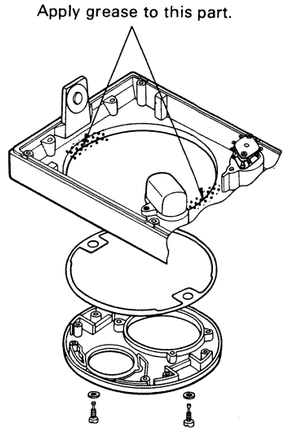


Fig. 3

*Otherwise, the rotary baffle will not smoothly operate.

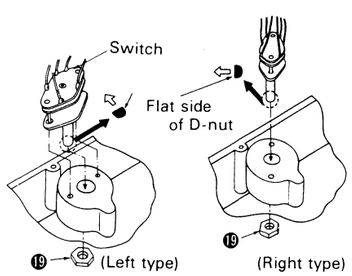
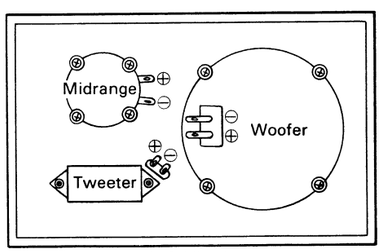


Fig. 5

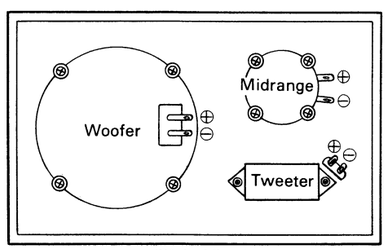
7. How to connect the speakers
(Lead wire colors)

	Input	Woofer	Midrange	Tweeter
⊕ Terminal	Sky-blue	Red	Orange	Yellow
⊖ Terminal	White	Green	Blue	Black

8. Speaker polarity



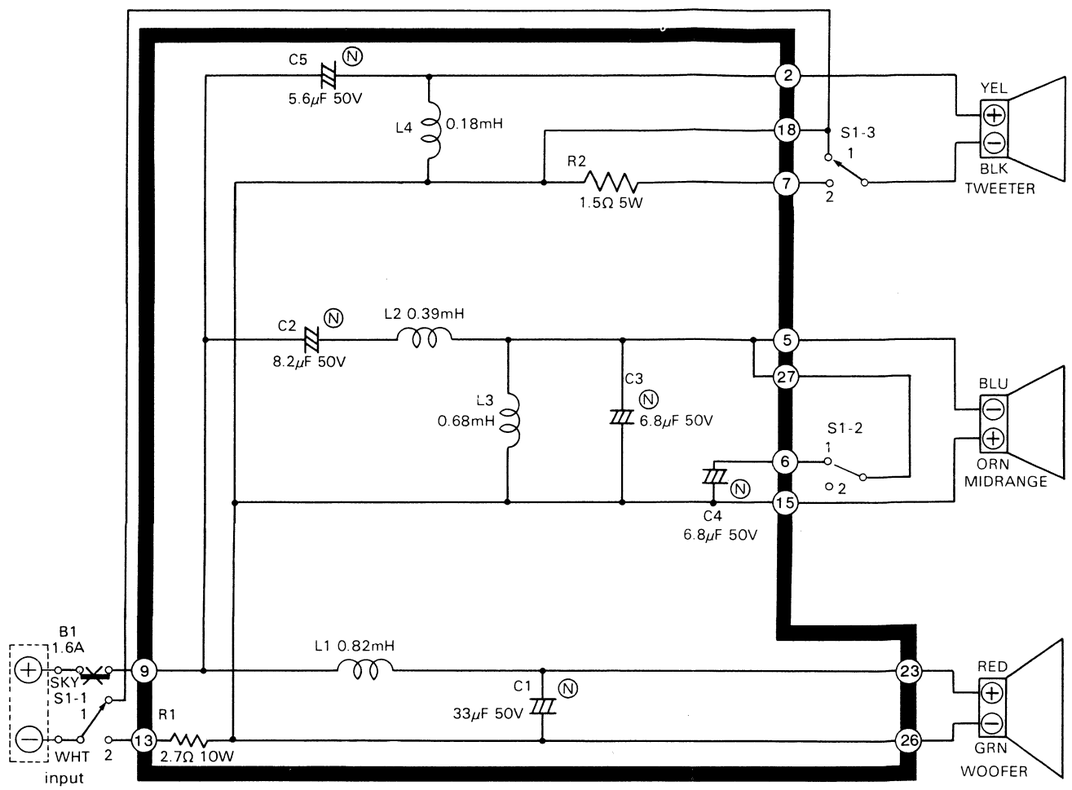
(Left View)



(Right View)

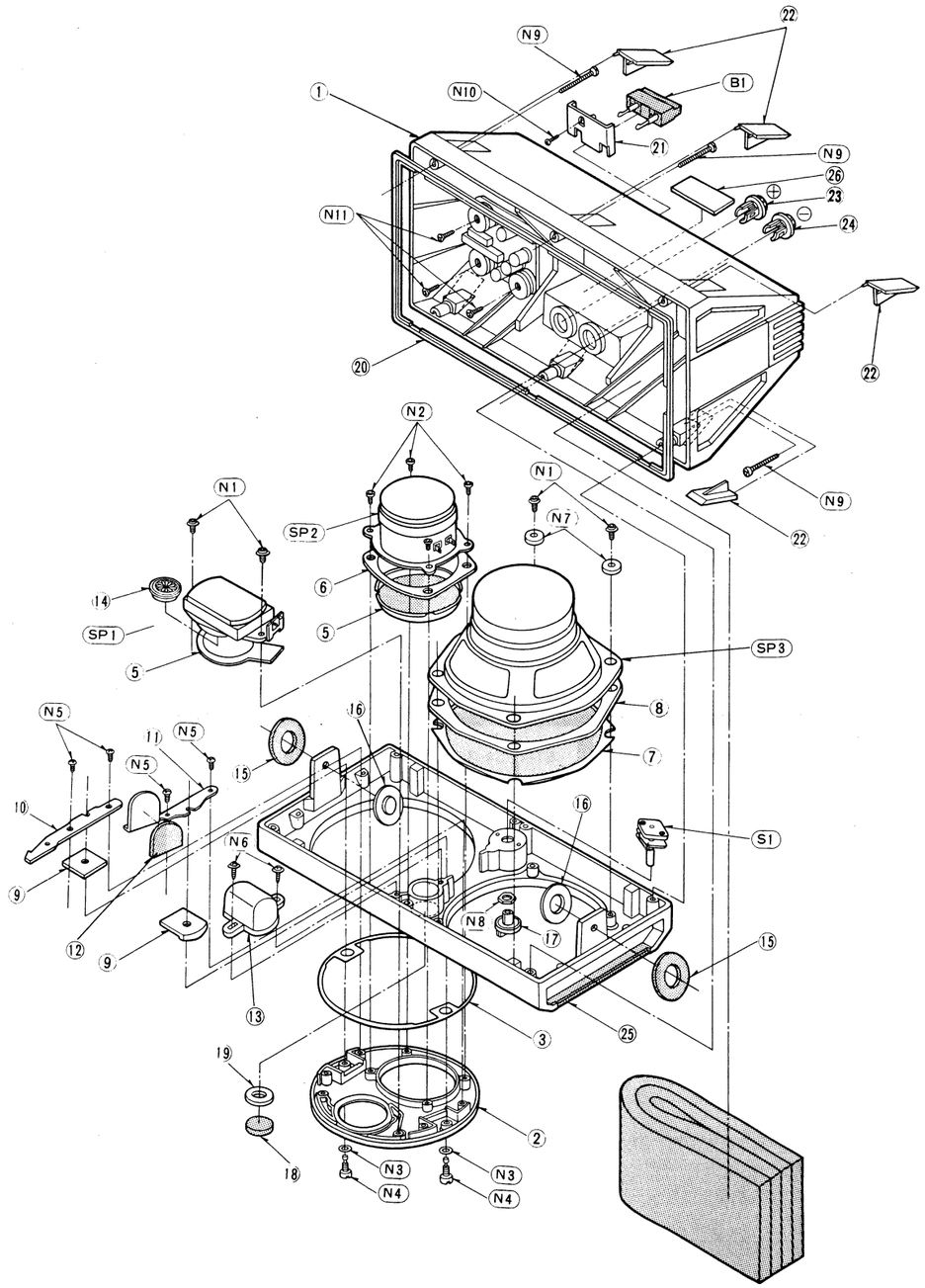
■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)



S1-1~S1-3:
1: Listening mode B
2: Listening mode A

■ EXPLODED VIEW



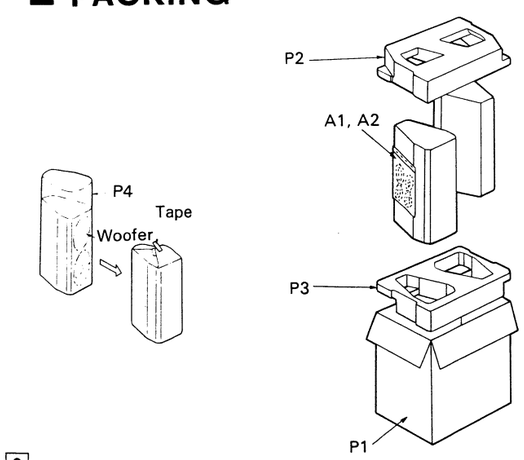
■ REPLACEMENT PARTS LIST

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. The parenthesized numbers in columns of description stand for the quantity per set.
3. The "**S**" mark is service standard parts and may differ from production parts.
4. **K**-marked parts are used for black type only, while ○-marked parts are for silver type only.

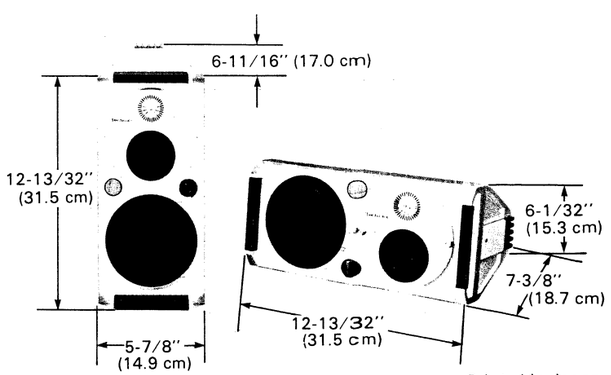
Ref. No.		Part No.	Description (Quantity)
SPEAKERS			
SP1		EAS3PH13S	Tweeter
SP2		EAS8PM101SD	Midrange
SP3		EAS14PL38S	Woofer
COILS			
L1		SLCSA821J	Choke Coil 0.82mH
L2		SLCSA391J	Choke Coil 0.39 mH
L3		SLCSA681J	Choke Coil 0.68 mH
L4		SLCSA181K	Choke Coil 0.18 mH
RESISTOR			
R1		ERF10ZXK2R7	Non-Flammable, 10W, 2.7Ω
R2		ERF5ZXK1R5	Non-Flammable, 5W, 1.5Ω
CAPACITORS			
C1		ECEA50Y33K	Electrolytic 50V 33μF
C2		ECEA50Y8R2K	Electrolytic 50V 8.2μF
C3, 4		ECEA50Y6R8K	Electrolytic 50V 6.8μF
C5		ECEA50Y5R6K	Electrolytic 50V 5.6μF
SWITCH			
S1		ESRE132F20E	Listening Mode
BREAKER			
B1		SSBS16AB02-1	Speaker Protection 1.6A
CABINET PARTS			
1	○	SYKS6-2	Cabinet (Silver) (1)
1	K	SYKS6-3	Cabinet (Black) (1)
2	○	SGES105	Baffle (Right) (Silver) (1)
2	K	SGES105-2	Baffle (Right) (Black) (1)
2	○	SGES105-1	Baffle (Left) (Silver) (1)
2	K	SGES105-3	Baffle (Left) (Black) (1)
3		SHRS9061	Spacer, Baffle (1)
4		SHRS9048	Spacer, Tweeter (1)
5		SGMS31-1	Net, Midrange (1)
6		SHRS9041	Spacer, Midrange (1)
7		SGMS30	Net, Woofer (1)
8		SHRS9040	Spacer, Woofer (1)
9		SUWS10-1	Bracket (1)
10		SUWS22	Bracket (1)
11		SUWS26	Bracket (Right) (1)
11		SUWS26-1	Bracket (Left) (1)
12		SHRS9070	Spacer (1)
13		SUWS25	Bass-reflex Port (1)
14		SGMS47-1	Cover, Tweeter (1)
15		SHRS9067	Spacer (2)

Ref. No.		Part No.	Description (Quantity)
CABINET PARTS			
16		SHES1	Cap (2)
17		SBNS9	Knob, Listening Mode (1)
18	○	SGMS32-1	Net, Bass-reflex Port (Silver) (1)
18	K	SGMS32	Net, Bass-reflex Port (Black) (1)
19		SHGS9019	Bracket, Rubber (1)
20		SHGS6021-1	Packing Rubber (1)
21		SMES20	Bracket, Breaker (1)
22	○	SGES112	Cover, Screw (Silver) (6)
22	K	SGES112-1	Cover, Screw (Black) (6)
23		SJFS4101-2	Terminal, + Orange (1)
24		SJFS4101-1	Terminal, − Black (1)
25	○	SYKS7	Panel, Front (Right) (Silver) (1)
25	K	SYKS7-2	Panel, Front (Right) (Black) (1)
25	○	SYKS7-1	Panel, Front (Left) (Silver) (1)
25	K	SYKS7-3	Panel, Front (Left) (Black) (1)
26		SGTS173	Name Plate (1)
SCREWS & WASHERS			
N1		XTWSS4+8F	Screw, ⊕4×8 (6)
N2	S	XTB4+6BFN	Screw, ⊕4×6 (4)
N3		SHWS50C50	Washer (2)
N4	○	SNES2011	Screw (Silver) (2)
N4	K	SNES2011-1	Screw (Black) (2)
N5	S	XTV3+8BFN	Screw, ⊕3×8 (2)
N6		XTW3+12E	Screw, ⊕3×12 (2)
N7		SME51-1	Washer (4)
N8	S	XNS8	Washer, ϕ8 (1)
N9	S	XTN4+30B	Screw, ⊕4×30 (6)
N10	S	XTV3+12BFN	Screw, ⊕3×12 (1)
N11	S	XTB4+30BFN	Screw, ⊕4×30 (4)
ACCESSORIES			
A1		SQFS230	Instruction Book (1)
A2		SHGS8001	Felt, Set Foot (1)
A3		SWXS189-2	Speaker Cord (1)
PACKING PARTS			
P1 [EF]	○	SPGS171-4	Carton Box (Silver) (1)
P1 [EF]	K	SPGS171-5	Carton Box (Black) (1)
P1 [XA]	○	SPGS171-6	Carton Box (Silver) (1)
P1 [XA]	K	SPGS171-7	Carton Box (Black) (1)
P1 [Other Areas]	○	SPGS171-2	Carton Box (Silver) (1)
P1 [Other Areas]	K	SPGS171-3	Carton Box (Black) (1)
P2		SPSS1039	Pad, Corner (1)
P3		SPSS1039-1	Pad, Corner (1)
P4		XZB30X50B02	Polyethylene Bag (1)

■ PACKING



■ DIMENSIONS



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